Proposed Workshop: The Roles of Student Projects and Work Experience in Vocational Education at Undergraduate and Taught Postgraduate Levels

J. Barrie Thompson¹, and Arthur Tatnall²

¹ Chair IFIP WG3.4 (Professional and Vocational Education),
   University of Sunderland, UK
   barrie.thompson@sunderland.ac.uk
² Vice-Chair IFIP WG3.4 (Professional and Vocational Education),
   Victoria University, Australia
   Arthur.Tatnall@vu.edu.au

Abstract: The areas of student projects and work experience in vocational education at undergraduate and taught postgraduate levels provide a focus for this open event. The key objectives set for the activities are (i) to gain information on specific instances of: project-based classes, capstone course(s), and student work experience, (ii) to gain an understanding of: beneficiaries and benefits, constraints, risks and challenges, and resources that are needed and those actually provided, (iii) to undertake evaluations - both pros and cons.

Keywords: Learning Models, Policy, Teaching Methods, Higher Education, Vocational Education.

1. Theme and Context for the Workshop

It is important that the vocational education of personnel who will work within the Information and Communication Technologies (ICT) sectors relates to real world situations. An obvious conduit to achieve this is via projects and work experience. Hence the overall theme of this open workshop is to consider the roles of different types of student projects and work experience in both undergraduate and taught postgraduate programmes.

That students should gain real-world experience during their academic programmes has been highlighted in many curriculum recommendations and guidelines. For example, in chapter 5 of the Software Engineering volume of the
2. Objectives and Goals

The prime objectives and goals for the workshop are:
• To gain information on specific instances of:
  - Project-based classes,
  - Capstone course(s), and
  - Student work experience
• To gain an understanding of:
  - Beneficiaries and benefits,
  - Constraints, risks and challenges, and
  - Resources that are needed and those actually provided.
• To undertake evaluations (Pros and Cons). These will be post-event, overall evaluations of expectations against the actual experience.
3. Inputs to the Workshop and its Operation

In the call for submissions and participation, potential attendees will be invited to submit short position papers which detail their relevant experience. Selected papers will be presented and used to introduce particular aspects of the workshop and simulate discussions. An example project module specification from a UK taught masters level program will also be used to stimulate discussions (a copy is attached as an appendix to this document).

A proforma will also be issued during the conference to collect experiences from those who have not submitted position papers.

The workshop itself will have a highly interactive format involving the full participation of all attendees. Also it is intended that extensive use will be made of activities within small groups. It is envisaged that the workshop will essentially consist of four distinct parts.

**Part A:** Recap the objectives of the workshop and present short summaries of selected position papers.

**Part B:** Round table discussion group sessions. Each of these will be led by a chair and reporter (identified from those who make submissions to the workshop).

It is envisaged that there will be up to three discussion groups. This will reflect the different areas highlighted in section 1 and address the issues listed in section 2 (the actual number of groups and the areas discussed will depend on the number of participants and the content of the participant submissions).

**Part C:** Feedback to full group: the chair of each activity group will feedback themes emerging from their group’s discussions. Plus discussions on the issues raised by each group.

**Part D:** A general discussion on issues raised and the identification of common themes.

4. Equipment, Facilities, Numbers, and Additional Information

**Equipment:** Projection facilities plus flip charts for group use

**Facilities:** Main room plus space for break-out groups to operate in and carry out discussions (up to three groups are envisaged)

**Numbers:** 25 to 35 (but could handle more by doubling up the groups).

**Additional Information:** This workshop mirrors a previous event which was held at the 2008 Conference on Software Engineering Education and Training. It is intended that this second workshop will address a much broader view across all branches of the computing discipline.
5. Post-Workshop Activities and Expected Outputs

It is intended that a comprehensive post-workshop report will be produced following the workshop. In producing this report use will be made of: the reports on the discussion groups produced by chairs and reporters, the contents of the position papers, and completed proformas. The report will include overall conclusions and recommendations and appendices which will detail accepted workshop submissions.

References


Appendix Example Masters Level Project Module, University of Sunderland, UK. Accessed via: http://www.cat.sunderland.ac.uk

Learning Outcome
Upon successful completion of this module, students will have knowledge of:
- Academic literature appropriate to the area under study.
- Critical awareness of current problems and/or new insights in the IT industry.

And the ability to:
- Effectively scope a project and meet the stated objectives.
- Critically assimilate and disseminate research relevant to the specific project area.
- Use effective time management skills to meet the objectives.
- Present the results of a project both verbally and in a written form.

Learning hours:
Support lectures, supervision, assessment and monitoring 25 hours.
Project operation, research and documentation 575 hours.

Indicative Content
The project should enable the student to develop, for the project sponsor, a technically challenging IT product (whether this be a feasibility study, design, implementation, reengineered solution, etc).

Projects may be sought from inside or outside the Institution. However, projects proposed by the School of Computing and Technology must demonstrate that they satisfy a real requirement and are not simply artificially created. Associated with each project there must be a client who will have a need for the practical deliverable ("the product"). Credit will be given for evidence that the student has elicited the client’s requirements in a systematic way. The client’s evaluation of the finished product will be an essential ingredient of the student’s final report. The student must endeavour to gather appropriate information to demonstrate client satisfaction.
Teaching, Learning

The project is a substantial piece of individual work to be undertaken by each student. There are support mechanisms provided within the project phase to enable each student to effectively scope, undertake and complete an appropriate project. An outline project proposal must be approved by the project tutor(s) before the official start of the project, thereafter a supervisor can be appointed. At the start of the project a Terms of Reference is developed by the student, in consultation with his/her designated client and supervisor. This Terms of Reference acts as the contract between the student and client, and will also identify the relevant research area that is to be studied to inform the practical aspect of the work. The progression of the project must be planned: the adherence to this plan or its amendment must be communicated to the supervisor. Firm guide-lines for project control and monitoring are issued in written form to students and supervisors. Students are expected to consult with the designated client for their project on a regular basis and maintain a semi-formal record of such meetings. They may also consult with other staff as the need arises using the usual appointments system in place in the school. During the project there will be two interim review milestones. The academic(s) assessing progress in these reviews will be independent of the project supervisor. Feedback is expected to be gathered by the student from the client (on the project and its progress) and is to be reported at these reviews. The review sessions will thus assist students in conducting their projects effectively by encouraging them to construct and maintain realistic work schedules. It will also give them experience of common industrial practice in project control. The Projects Tutor(s) will maintain a file for each student containing the terms of reference, the project schedule, copies of the review sheets and assessment forms.

Assessment

Projects will be assessed against the five aspects below:

Research. 30%. The extent to which the methodical and critical investigation of contemporary material has been incorporated into its development. This must be passed in order for the project to be a pass overall

Success. 20%. The extent to which the practical deliverable and the written dissertation achieve the objectives stated in the agreed terms of reference.

Dissertation. 20%. The quality, clarity and logical progression, of the written dissertation which deals with the conduct and results of the project.

Viva/Presentation. 20%. The ability of the student to report, to a viva panel, the conduct of the project and his or her command over the subject area

Reviews/Control. 10%. The ability to plan, monitor and maintain a viable work schedule.

Each project is marked by the supervisor and a second marker. In the exceptional cases where there are substantial disagreements about two resultant assessments, then the Projects Tutor(s) will arrange for an independent third marker to evaluate the project. Each of the five aspects will be marked according to the weights given above and consolidated into a final percentage mark.